

Docket Number  
70404.110/ok

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kentaro RYUH et al.	Art Unit: 2629
Application No.: 10/598,029	
Confirmation No.: 9354	Examiner: S. Moon
Filed: August 16, 2006	
Title: DISPLAY DEVICE AND AUTOMOBILE HAVING THE SAME	

**REPLY BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Appellant is filing this Reply Brief in response to the Examiner's Answer, dated January 13, 2011, in connection with the above-identified application.

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**STATUS OF CLAIMS:**

Claim 2 has been canceled.

Claims 1 and 3-10 are pending.

Claims 1 and 3-10 are rejected over prior art, have been at least twice rejected, and are the subject of this appeal.

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**GROUND OF REJECTION TO BE REVIEWED ON APPEAL:**

The Examiner's rejections of claims 1 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi (JP 2001-117533) in view of Wakita (U.S. 2002/0154077), claims 4 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi and Wakita in view of Baba (U.S. 2002/0003522), claims 6-8 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi and Wakita in view of Kwon (U.S. 6,360,149), and claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi and Wakita in view of Morita (U.S. 7,154,488).

**ARGUMENT:**

In the Examiner's Answer of January 13, 2011, the Examiner has maintained the rejections of claims 1 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi in view of Wakita, claims 4 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi and Wakita in view of Baba, claims 6-8 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi and Wakita in view of Kwon, and claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi and Wakita in view of Morita.

In Section No. 10, "Response to Argument," on pages 10 and 11 of the Examiner's Answer, the Examiner responded to the arguments made by the Appellant in the Appeal Brief filed on October 14, 2010. Appellant will now respond to specific allegations and arguments contained in Section No. 10, "Response to Argument" of the Examiner's Answer.

In the paragraph bridging pages 10 and 11 of the Examiner's Answer, the Examiner argued that the changing of the driving frequency discussed in Wakita does not require using a display that includes both of a normally white ("NW") pixel and a normally black ("NB") pixel. Thus, the Examiner maintained the allegation that one having ordinary skill in the art at the time of Appellant's application would have lowered the driving frequency of the display device of Nobuyoshi because Wakita teaches a display that possesses a lowered driving frequency. More specifically the Examiner argued:

Appellant's above assertion that including NW and NB pixels in a display device is a requirement to change the driving frequency of the display device is simply **incorrect**. As explained in the Advisory action mailed May 27, 2010, a NW pixel is merely a pixel which displays white when no voltage is applied to and displays black when a full voltage is applied to. Similarly, a NB pixel is merely a pixel which displays black when no voltage is applied to and displays white when a full voltage is applied to. Whether a pixel is a NW pixel or a NB pixel is not directly related to a vertical scanning frequency of a display device. Thus, the type of a pixel is not a requirement of adjusting the vertical scanning frequency of the display device. ... [A]s explained above, **any one** of NW pixels, NB pixels, and a combination of NW and NB pixels can be used in systems which switch between different display formats. Lastly, the Appellants argues [pg 14] that the combination of the cited prior arts is based on the Applicant's own invention. However, Wakita teaches the concept of lowering driving frequency and **one of**

**ordinary skill in the art at the time of the invention would know** that lowering driving frequency lowers the power consumption.”

However, nowhere in Wakita is there any teaching or suggestion that using a lowered driving frequency to save power as discussed in Wakita would work in a display device that includes “**any one** of NW pixels, NB pixels, and a combination of NW and NB pixels” as alleged by the Examiner. Instead, as was discussed in detail in the Appeal Brief filed on October 14, 2010, Wakita specifically teaches a total of 13 embodiments of a special purpose display device, each and every one of which requires adjacent pixels to be arranged to “have opposite signs” and “have, in the absence of an electric field, display states such that one is in a bright state while the other is in a dark state” and “alternate between light and dark.” As discussed in, for example, paragraphs [0038]-[0041] of Wakita, the reduced power consumption at a lowered driving frequency is only possible because the special purpose display device of Wakita is able to reduce flickering because it includes **both** NW and NB pixels such that at least half of the screen of the special purpose display device of Wakita will be transmitting light at all times no matter what voltage levels are being applied to the pixels.

Thus, Wakita specifically teaches that both NW and NB pixels must be used in all embodiments of the invention disclosed therein. Wakita fails to suggest or even recognize any desirability or possibility that the Wakita invention would use any configuration other than one which includes both NW and NB pixels (e.g., only NW pixels or only NB pixels). Further, Wakita specifically teaches that if only NW pixels or only NB pixels are used in the invention of Wakita, the display will not function as intended.

The Examiner attempted to overcome the lack of any teaching whatsoever in Wakita of lowering the driving frequency of a display that does not include both NW and NB pixels by alleging that because display devices using NW pixels, NB pixels, or a combination of NW and NB pixels can be driven with different display formats (e.g., PAL, NTSC, SECAM, etc.) and because these different display formats are operated with slightly different driving frequencies (PAL = 50 Hz; NTSC = 60 Hz; SECAM = 50 Hz), it would be possible to lower a display frequency

of the display of Nobuyoshi to any desired level, including the extremely low level of Wakita, to save power in the manner as taught by Wakita.

However, in order to achieve the power savings discussed in Wakita, it is necessary to provide a driving frequency that is "lower than 30Hz, and more preferably, [] less than 10Hz" which Wakita teaches is necessary to produce the power saving effects associated with lowered frequency driving, as discussed, for example, in paragraphs [0042] and [0047] of Wakita. This is an extremely low driving frequency that is more than 50% lower than the very old and outdated standard NTSC driving frequency of 60 Hz. One having ordinary skill in the art at the time of Appellant's invention would have understood, as Wakita explicitly states, that conventional display devices (those including only one of NB or NW pixels) have a problem in which, "[A]t less than 60 Hz, the human eye is sensitive to flicker. In such displays that the viewer is required to gaze at the display screen for long periods of time, for example, in displays for VDT operation, it is necessary that the refresh frequency be set at about 120 Hz, for example, to reduce the viewer's eye strain," see paragraph [0002] of Wakita.

The Examiner is reminded that the consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success. Rockwell Int'l Corp. v. United States, 147 F.3d 1358, 47 USPQ 2d 1027, 1033 (Fed. Cir. 1998). Not only does the prior art fail to provide or even suggest any motivation to combine Nobuyoshi and Wakita in the manner alleged by the Examiner, but the Examiner has completely ignored the clear teaching away from such a combination as is expressly found in Wakita as discussed above.

Thus, one having ordinary skill in the art at the time of Appellant's invention would not have any reason to combine Nobuyoshi and Wakita as suggested by the Examiner, but instead would have understood the reasons why one of skill in the art would not have combined Wakita with Nobuyoshi, as clearly explained in Wakita. Just because conventional display devices of the type as discussed in Nobuyoshi could operate after having their driving frequency lowered from 60 Hz to 50 Hz in response to a change in display formats, this does not mean

that a conventional display device of the type as discussed in Nobuyoshi would continue to function if its driving frequency was even further lowered to the level of less 30 Hz (and preferably 10 Hz or less) which Wakita teaches is necessary to achieve the power saving benefits discussed in Wakita. In fact, as mentioned above, Wakita explicitly states that conventional displays could not have their driving frequencies lowered to such a level without producing excessive undesirable flickering that would render the display virtually useless for all intents and purposes.

Instead of basing the conclusion of obviousness on actual teachings or suggestions of the prior art and the knowledge of one of ordinary skill in the art at the time the invention was made, it is clear that the Examiner has improperly used Applicants' own invention as a guide. It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious. The Federal Circuit has previously stated that one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992).

Accordingly, Appellant respectfully requests reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi in view of Wakita.

The Examiner relied upon Baba, Kwon, and Morita to allegedly cure the deficiencies of Nobuyoshi and Wakita. However, Baba, Kwon, and Morita clearly fail to teach or suggest the feature of "both the first and second vertical scanning frequencies used to display still images on the first and second display sections are lower than both the first and second vertical scanning frequencies used to display moving images on the first and second display sections" as recited in Appellant's claim 1. Additionally, Baba, Kwon, and Morita also fail to provide any reason to combine Nobuyoshi and Wakita in the manner as alleged by the Examiner. Thus, Appellant respectfully submits that Baba, Kwon, and Morita fail to cure the deficiencies of Nobuyoshi and Wakita described above.

Accordingly, Appellant respectfully submits that Nobuyoshi, Wakita, Baba, Kwon, and Morita, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in Applicant's claim 1.

In view of the foregoing arguments, and the arguments presented in the Appeal Brief filed on October 14, 2010, Appellant respectfully submits that the rejections of claims 1 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi in view of Wakita, claims 4 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi in view of Wakita, and further in view of Baba, claims 6-8 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi in view of Wakita, and further in view of Kwon, and claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Nobuyoshi in view of Wakita, and further in view of Morita should be reversed, and that claims 1 and 3-10 are allowable.

Respectfully submitted,

Dated: March 10, 2011

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